

5. VARNISHES VULAK/ Alkyd phenolic varnish/ **LAK 380**



CABLES



IMPREGNANTS



WIRES



RESEARCH

Application:

A quality general-purpose varnish for impregnation of transformers, chokes, relays and fields, together with most types of electrical motoros.

Alkyd phenolic varnish

Product information:

ALKYD PHENOLIC
EXCELLENT ELECTRICAL PROPERTIES
HIGH BOND
HIGH FLASH POINT
CLASS H (180°C)
UL certificate

General description:

LAK 380 is a high flash, alkyd phenolic, which produces tough resilient insulating films with excellent electrical and bond strength characteristics at all operating temperatures up to Class H (180°C). The varnish gives excellent penetration into windings with clean drainage and low secondary drainage properties. The system has excellent tank stability and is well suited for low usage larger tanks. The cured products has exceptionally good resistance to moisture and insulating oils, together with full cure in the deeper sections of windings. Good flexibility is shown around fly leads, and compatibility with all normal insulating systems is achieved.

Application:

VISCOSITY	115-145 secs FORD 4 at 20 °C
NON-VOLATILE CONTENT	40 – 50%
SPECIFIC GRAVITY	0,92 – 0,94
FLASH POINT	40 °C
SHELF LIFE	12 months at 20 °C

Application:

METHOD	cold, hot dip or vacuum impregnation		
VISCOSITY	Cold dip	Hot dip	Vacuum
	65 – 120 sec	65 – 150 sec	
REDUCER	Xylene		



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Workshop practice:

Varnish in impregnating tanks should be checked for viscosity on a regular basis to ensure consistent impregnation.

A temperature/viscosity graph is available on request.

Solvent loss from the tank can be reduced by keeping the tank lidded when not in use.

The inclusion of a condenser and trap is recommended when vacuum techniques are applied.

Regular additions of fresh varnish to the tank are recommended to maintain stability.

Tank samples will be analyzed free of charge by our laboratories.

The cure time chosen for impregnation is dependent on the size and type of component, and the oven efficiency. Typical figures are given.

Cure times:

TIME (at temperatures) (hours)	4	2
TEMPERATURE (°C)	130	160

Properties according to ASTM:

Preparation of specimens: 2 dips in reverse, each cured 2 h at 160°C

BOND STRENGTH

ASTM D 115	RT	20.5kg	150°C	1.8kg
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DIELECTRIC STRENGTH RT

ASTM D 115				1660 V/0.01mm
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(Copper plate)

24hr immersion in distilled water at 23°C

1220 V/0.01mm

WEIGHT LOSS 200 °C

ASTM D2756	48hr	7.7%
	96hr	10.6%

(On glass cloth)

The information provided herein accords with our knowledges about the subject on the date of publication. This information might be revised if new knowledges and experience will be available. The data provided fall within the normal range of product properties are related only to the specific material. These data may not be valid for such material used in combination with any other materials or additives or in any process, unless expressly indicated otherwise. The data provided should not be used to set limits or used alone as the basis for design. The data are not intended for substitute of any testing that you might need to do for decision if the specific material is suitable for your particular purposes. Since VUKI ca not anticipate all variants in actual end-use conditions, VUKI makes no warranties and assumes no liability in connection with any use of this information. Nothing in this document is to be considered as a license to application or recommendation to infringe any patent rights.

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Thermal endurance:

Method ASTM D 1932	On glass cloth, curved electrode	
Intercept	25,000 hours 167°C	
According to UL 1446	Intercept 20.000h	On enamelled wires

Wire type:

Twisted Pair	Helical coil		
Polyurethane & Nylon (MW-28, class 130)		130	155
Polyester & Nylon (MW-24, class 155)		155	180
Polyester imide (MW-30, class 180)		180	200
Modif. Polyester (MW-35, class 200) & Amidimide		180	200
Polyamide (MW-16, class 220)		220	180

CHEMICAL RESISTANCE LAK 380 shows outstanding resistance to moisture, salt spray, tropic and arctic conditions (according to MIL-I-24092, grade CB, type M, class 155, specification from U.S. Navy) and to corrosive environments. Unaffected after immersion.

ASTM D-115 on copper panels curing 2 H 150°C

24 h	25 °C	Acetone
24 h	25 °C	Xylene
24 h	25 °C	Sulphuric Acid
24 h	25 °C	Caustic Soda
168 h	25 °C	Kerosene
48 h	110 °C	Transformer Oil
336 h	25 °C	Synthetic Lubricants SKYDROL 500

Health and safety:

Refer to Material Safety Data Sheet available. .

Packing:

210 ltr, 25 ltr, 5 ltr



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